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Hydrologic Report	CEC Right of Way Maintenance Categorical Exclusions
Prepared by Cari Press	

## Proposed Action

Central Electric Cooperative, Inc. (CEC) would fell up to 500 hazard trees located within 13 miles of Right of Way (ROW) (10 ft each side of powerline), equating to approximately 40 acres of potential impact, on the Sisters Ranger District (RD). About 40 felled trees would be retained by the Forest Service that would later be placed into the Metolius River under a large wood project to provide instream large wood for aquatic species. Felled trees not intended for other purposes would be placed in log decks and sold as forest products. Some trees would be felled and left to prevent resource damage or as mitigation. In the Riparian Reserve (RR), approximately 28 trees would be felled and left, one of which will be felled into First Creek and two into Davis Creek. Some trees may have to be felled in pieces for safety reasons. These pieces would be taken to the landings and sold or burned. CEC would also trim tree limbs adjacent to the ROW that pose a potential arching hazard. Logging debris (slash) could be placed in piles for subsequent burning, lopped and scattered, or chipped on-site and removed depending on the location of tree felling, removal, and the amount of slash. CEC would also replace approximately 131 power poles within the ROW, approximately 57 of which would be within the RR, and most within 2 ft of their existing location.

## Hydrology Analysis Area

The direct, indirect and cumulative effects analysis area is the Headwaters Metolius River Subwatershed (SWS), the lower 0.5 miles of the Lower Lake Creek SWS, and the lower 500 ft of the First Creek SWS. A small amount of treatment would occur in the Jack Creek SWS and the Lower Indian Ford SWS but these SWSs are not included in the Hydrology Analysis Area. Although approximately 53 hazard trees would be removed and 27 poles replaced, no trees would be treated in the Riparian Habitat Conservation Area (INFISH management direction) in the Lower Indian Ford Creek SWS and only 1 pole within the Riparian Habitat Conservation Area would be replaced. In the Jack Creek SWS only 1 pole on the outer edge of the Riparian Reserve (NWFP management direction) would be replaced. Given that very little disturbance would occur in the RR/RHCA and access would be on existing authorized roads, the Lower Indian Ford Creek and Jack Creek SWSs are not included in the Hydrology Analysis Area. Therefore, all subwatersheds in the Hydrology Analysis Area are within the Upper Metolius River Watershed, within the Northwest Forest Plan management area, and all of the treatment in these SWSs is within the Metolius Wild and Scenic River Corridor.





## Management Direction

Management direction relating to aquatic resources including the Deschutes LRMP, Northwest Forest Plan, Aquatic Conservation Strategy, Riparian Reserve and Riparian Habitat Conservation Area buffers, and the Metolius Wild and Scenic River designation is discussed in the Aquatics Biological Evaluation (Riehle 2020). Additional direction is discussed below.

### Clean Water Act

The State of Oregon, as directed by the Clean Water Act (CWA) and the Environmental Protection Agency, is responsible for the protection of rivers and other bodies of water in the public interest. Beneficial uses as defined by the State of Oregon in the Deschutes Basin are listed in Table 1. To show that water quality is being protected, states are required by the CWA to adopt water quality standards which must be approved by the Environmental Protection Agency. Best Management Practices (BMP) and state-wide management plans are a requirement of the CWA and are used to meet water quality standards. Waterbodies that do not meet the State Standards for water quality are discussed below.

Table 1. Beneficial uses within the CEC Right of Way Maintenance Project area and water quality parameters that will be analyzed for effects to water quality from the project.

Beneficial Use	Water Quality Parameter
Public Domestic Water Supply	Turbidity, Flow
Irrigation	Flow
Livestock Watering	Flow
Fish and Aquatic Life	Sedimentation, Temperature, Flow
Wildlife and Hunting	Flow
Fishing	Temperature
Water Contact Recreation	Sedimentation, Temperature, Flow
Aesthetic Quality	Turbidity

### 303(d) Listed Streams

The State of Oregon is required by the Clean Water Act, Section 303(d), to identify waters that do not meet water quality standards. The Metolius River for its entire length is listed on the 2012 Oregon 303(d) list for water temperature exceedences above the State standards for bull trout spawning and juvenile rearing (12°C) (ODEQ 2012). It remains on the Draft 2018 Oregon 303(d) list for the same water quality exceedance (ODEQ 2020). States are required to develop Total Maximum Daily Load allocations, which include Water Quality Management Plans for 303(d) listed waters. The Upper Deschutes River Subbasin Total Maximum Daily Load and Water Quality Management Plans are being planned and cover all the subwatersheds in the hydrology analysis area for the CEC Right of Way Maintenance Project area. A Memorandum of Understanding signed May 2002, between Oregon Department of Environmental Quality and the U. S. Forest Service, designated the Forest Service as the management agency for the State on National Forest Service lands. To meet Clean Water Act responsibilities defined in the





Memorandum of Understanding, the Forest Service is responsible for developing a Water Quality Restoration Plan, which is in draft form (USDA Forest Service 2004b). Activities proposed in the CEC Right of Way Maintenance Project area are in compliance with the draft Water Quality Restoration Plan.

## Existing Condition

A brief description of the existing condition is described here and more information can be found in the Metolius Watershed Analysis and Update (USDA Forest Service 1996, 2004). The CEC ROW in the project area is only near water where it parallels the Metolius River in the Camp Sherman area on the west side, and after it crosses the Metolius River near First Creek and parallels the River on the east side, much of which is within the outer edge of the Riparian Reserve and all of which is in the Recreation segment of the Metolius Wild and Scenic Corridor. The tributary confluence areas that are crossed by the ROW are South Fork Lake Creek (perennial), North Fork Lake Creek (perennial), Davis Creek (intermittent), First Creek (intermittent), and several intermittent/ephemeral channels on the east side of the Metolius River. Recreation use along the Metolius River through the project reach is high and includes numerous developed campsites, recreation residences, private residences, the Metolius River trail, fisherman trails, roads, bridges and uses such boating/tubing, fishing, hiking, and camping. Road densities in the Headwaters of the Metolius River subwatershed are approximately 5 mi/mi<sup>2</sup> and considered high, according to the document, "Determining Risk of Cumulative Watershed Effects Resulting from Multiple Activities" (USDA Forest Service 1993). In addition, there is a network of authorize roads in the CEC Right of Way used to access the powerlines. Restoration efforts to decommission roads, reduce user-created trails and roads, and restore in-stream habitat in the Metolius River through the addition of wood have occurred over the last 20 years.

## Aquatic Project Design Criteria

Refer to Aquatics Biological Evaluation (Riehle 2020).

## Effects Analysis

Measures for evaluating hydrology effects in the analysis area for the CEC Right of Way Maintenance Project are acres of soil detrimentally impacted in Riparian Reserves (RR) or Riparian Habitat Conservation (RHCA) areas and trees (> 12" dbh) removed from the RR/RHCA (Table 2; also see RR/RHCA buffer width in Table 3 in Aquatics BE (Riehle 2020)). Ground-based activities in RR/RHCAs can detrimentally impact a portion of the soils in the disturbed areas and because they're adjacent to waterbodies, they have the potential to increase sedimentation to waterbodies and reduce future wood recruitment. Removal of trees (> 12" dbh) from the RR/RHCA has the potential to remove future down wood or instream wood habitat from the RR/RHCA. Analysis of hydrology effects is focused in the Riparian Reserves in the northern portion of the project primarily in the Headwaters of the Metolius subwatershed. Hydrology effects from ROW maintenance in the southern portion of the project area are not predicted because soil disturbing activities in the RHCA would be minimal. No trees would be





treated in the RHCA adjacent to Indian Ford Creek and only 1 pole within the RHCA would be replaced.

Table 2. CEC Right of Way Maintenance Project acres and estimated number of trees removed in Riparian Reserves.

Subwatershed	ROW acres in RR*	Net trees (>12" dbh) removed from RR
Headwaters Metolius River	20.1	8
First Creek	0.6	0
Lower Lake Creek	5.9	0
Total	26.6	8

\* Only areas within the ROW accessed by ground-based equipment traveling off-road has the potential to detrimentally impact soils.

### ***Streamflow***

The CEC Right of Way Maintenance Project would maintain existing streamflow. Although the building of a utility corridor and maintenance of that corridor has removed all tree canopy and keeps brush to a minimum height within the 20 ft wide corridor, the removal of the trees and debris left behind from maintenance of that corridor, which is proposed under this project, would not alter streamflows. Trees that would be removed were already slated to be felled once the powerline was built as a requirement of the special use permit allowing maintenance of the powerline. Therefore, trees that would be removed under this project would not affect evapotranspiration of the trees. In addition, runoff would not increase by removing the trees because no new roads would be constructed and compaction in the Riparian Reserve from ghost trails used to access trees would be negligible. Only approximately 28 trees would be moved with ground-based equipment in the Riparian Reserve over approximately 2 miles and many of these can be reached from existing roads.

### ***Water Quality***

Water quality effects from the CEC Right of Way Maintenance project would be negligible. Although the building of a utility corridor and maintenance of that corridor has created roads and trails and eliminated potential shade producing vegetation, the removal of the trees and debris left behind from maintenance of that corridor, which is proposed under this project, would not alter the water quality. Removal of felled trees in the ROW would not affect stream shade or water temperature; and therefore, would have no effect on the 303(d) listing status of the Metolius River. Although some soil displacement and compaction would occur outside of Riparian Reserves, a negligible amount of sediment from harvest activities outside RR would reach the streams due to trapping by downed wood and ground vegetation and distance to the streams. Ground-based equipment would primarily occur on existing authorized roads because CEC has access roads to their powerline throughout their 20 ft right-of-way. Some single out-and-back passes with ground-based equipment could occur in the Riparian Reserve but it would be minimal, on flat ground (< 15% slope), and spread over a large area. Only approximately 28 trees greater than 12" dbh would be removed in the Riparian Reserve and they would be on the





high bench on the east side of the Metolius River. Trees in Riparian Reserves in areas that would cause resource damage would be felled and left (also approximately 28 trees).

In addition, ground disturbance caused by the replacement of 57 power poles in the Riparian Reserve, would be minimal and not at a magnitude to impair water quality. Areas potentially disturbed by the replacement of a power pole would likely be less than 100 ft<sup>2</sup> for a total of less than 1 acre of disturbance over approximately 7 miles.

Project design criteria would further reduce the risk of water quality effects. No new roads would be created and landing in Riparian Reserves would be located on already disturbed surfaces. Activity slash in Riparian Reserves could be chipped, piled and burned or lopped and scattered. Burn piles would not substantially contribute to sedimentation because they would meet aquatic design criteria for size and location. Project design criteria and contract regulations requiring the maintenance of road drainage, equipment inspection and maintenance, a spill kit on-site for emergencies, and the restriction of ground-based operations to periods that wouldn't create runoff, would prevent logging operations from adversely affecting water quality.

### ***Stream and Riparian Reserve Condition***

Stream and Riparian Reserve condition can be affected by changes to riparian vegetation, woody debris, sedimentation, and streamflow. Although the building of a utility corridor and maintenance of that corridor has likely had an effect on stream and Riparian Reserve condition, the removal of the trees and debris left behind from maintenance of that corridor, which is proposed under this project, would not substantially alter the condition. Effects to streamflow and sedimentation are predicted to be negligible. Effects to riparian vegetation and woody debris are discussed below.

Ground disturbance caused by the replacement of 57 power poles in the Riparian Reserve, would be minimal and not at a magnitude to alter plant communities. Ground disturbance caused by the replacement of power poles in Riparian Reserves would impact less than 1 acre over approximately 7 miles. Project design criteria such as requiring clean equipment before entering a site would help prevent the spread of invasive species as a result of this project.

Trees that are in high water table soils that support riparian vegetation would be hand felled and left in order to not create resource damage to the soils or riparian vegetation. In addition, trees that would require a long skid trail or a skid trail located in an area that could cause resource damage would also be felled and left. Approximately 28 trees in the Riparian Reserves were identified for these reasons to be felled and left. One tree would be felled into First Creek and two into Davis Creek to provide instream habitat.

Although approximately 28 trees (>12" dbh) would be removed from the Riparian Reserve, there would only be a net loss of approximately 8 trees (>12" dbh) from the Riparian Reserve because 20 trees in the CEC ROW from outside the Riparian Reserve would be retained to later be placed in the Metolius River under a stream restoration project. Over the 13 miles of utility corridor that would be treated under this project, only approximately 76 trees greater than 12" dbh in the Riparian Reserve would be felled. Of these, approximately 28 trees greater than 12" dbh would





be felled and left in the Riparian Reserve in order not to cause resource damage. Approximately 20 of the 76 trees would be felled and retained to later be added to the Metolius River within the CEC project area under a stream restoration project. An additional 20 trees felled outside the Riparian Reserve would be retained to later be added to the Metolius River under the same stream restoration project for a total of 40 trees to be placed instream. Therefore, existing wood debris, future woody debris, and lateral, longitudinal, and drainage network connections would be maintained by the CEC Right of Way Maintenance project because only a net minimal amount of trees (~8 trees) would be removed from the Riparian Reserve and removal would occur across an approximately 2 mile section of corridor and not at a magnitude that would retard habitat for riparian dependent species.

### ***Metolius Wild and Scenic River Corridor***

The project would protect and maintain the Outstandingly Remarkable Values (ORVs) associated with hydrology and riparian areas (i.e. Hydrology ORV, Fisheries ORV, and the part of the Ecology ORV regarding riparian plants) along the Metolius River. Effects to hydrology resources are not predicted because project design criteria developed to protect water quality and riparian areas would be implemented. In addition, most of the large wood in the Riparian Reserve would be retained by either felling and leaving trees in the RR or by stockpiling trees felled outside the RR that would be later used (under another project) to augment trees in RR by placing in the Metolius River for instream habitat. The trees felled and left in the Riparian Reserve would provide upland habitat and soil erosion control. Riparian vegetation would be protected by hand felling and leaving trees in high water table soils. Activities proposed under the CEC ROW Maintenance project are consistent with the Wild and Scenic River Management Plan standards and guidelines listed in the Aquatic Biological Evaluation (Riehle 2020).

### **Cumulative Effects**

The cumulative effects to the hydrology resource from the CEC ROW Maintenance Project would not incrementally add to cumulative effects because no measurable effects to streamflow, water quality, stream and Riparian Reserve condition, or ORVs associated with the hydrology resource for the Metolius Wild and Scenic River are predicted. Although the building of a utility corridor and maintenance of that corridor has altered the landscape and potentially some aspects of the hydrology resource, the removal of the trees and debris left behind from maintenance of that corridor, which is proposed under the CEC ROW Maintenance project, would not affect the hydrology resource. Future instream wood projects in the Metolius River, may benefit the stream and Riparian Reserve condition, but the addition of three trees that would be felled and left in First Creek and Davis Creek under the CEC ROW Maintenance project would not combine to result in a significant positive cumulative effect.

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